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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/868,364	10/12/2001	Franz Schellhorn	P01,0212	8559
26574	7590	06/03/2005	EXAMINER	
SCHIFF HARDIN, LLP PATENT DEPARTMENT 6600 SEARS TOWER CHICAGO, IL 60606-6473			RUDE, TIMOTHY L	
			ART UNIT	PAPER NUMBER
			2883	

DATE MAILED: 06/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/868,364

Applicant(s)

SCHELLHORN ET AL.

Examiner

Timothy L. Rude

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 22 February 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 26-52 is/are pending in the application.
- 4a) Of the above claim(s) 45-52 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 26-44 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 June 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>20030413</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Election/Restrictions*

1. Applicant's election without traverse of Group I in the reply filed on 22 February 2005 is acknowledged.

Claims 45-52 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected Group, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 22 February 2005.

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

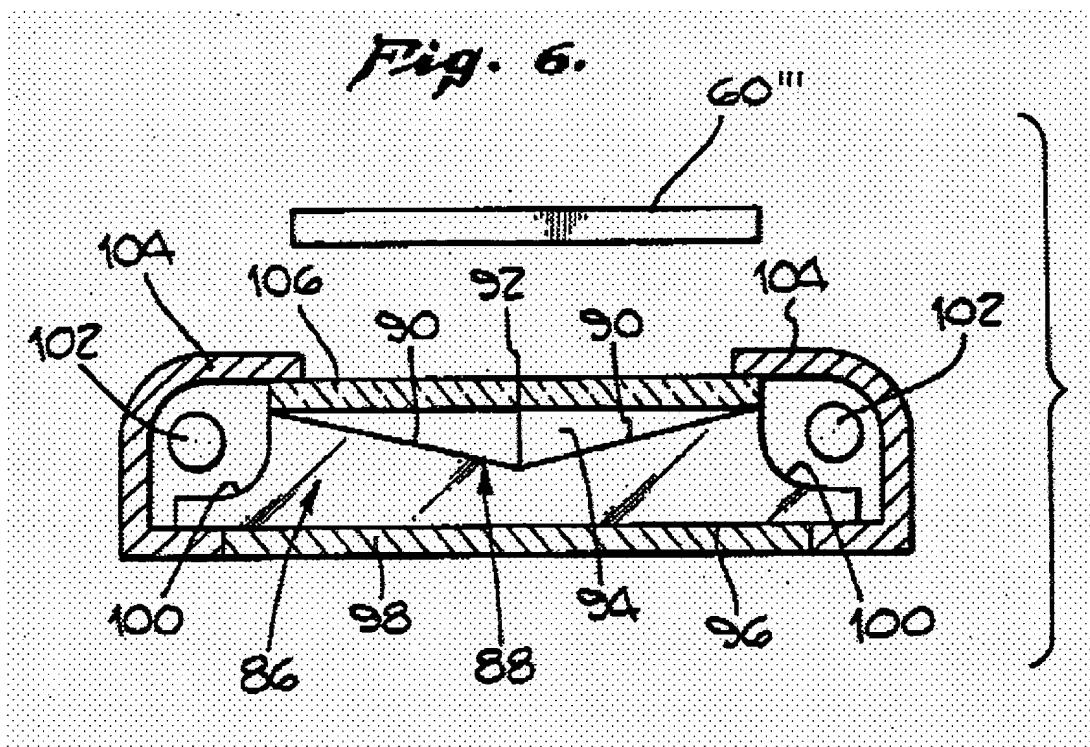
(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

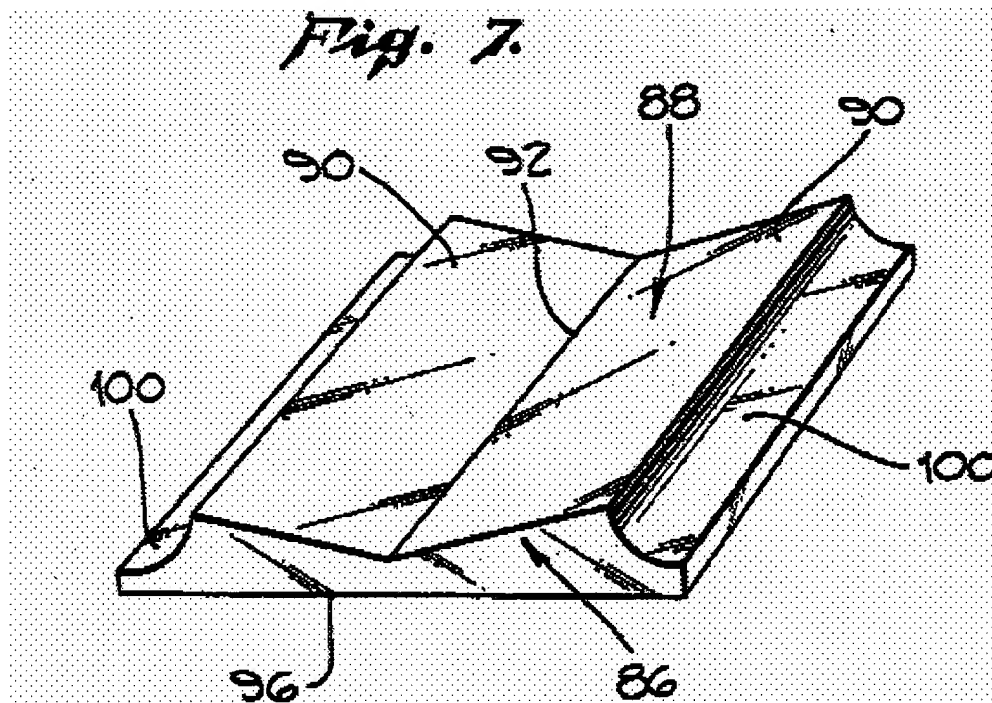
2. Claims 26, 43, 27, 29, 31, and 38 are rejected under 35 U.S.C. 102(b) as being anticipated by Kalmanash USPAT 5,211,463.

As to claim 26, Kalmanash discloses [entire patent, especially Figures 6 and 7] a light source element, comprising: a light waveguide, 86; a light exit face, 88, and at

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least one light entry face, 100, on the light waveguide; a surface, 96, lying opposite the light exit face, and at least some of lateral surfaces [surface facing viewer in Figure 7 and surface behind (away from viewer), as well as the lower vertical portions of the left and right surfaces] connecting the light exit face and the opposite surface being covered with reflectors, 104 on left and right, that at least one of reflect and diffusely return light; and the light entry face [concave surfaces, 100] being formed by a part of at least one of the lateral surfaces and the opposite surface not provided with a reflector and being arranged at an acute angle [concave curve has a portion that is at an acute angle – please note Applicant has not claimed planar (flat) surfaces] relative to one of principal directions of extent of the light waveguide.





As to claim 43, Kalmanash discloses [entire patent, especially Figures 6 and 7] a liquid crystal display [title] with a light source element, comprising:

- a liquid crystal element, 60", arranged at a side of a light exit face, 88, of the light source element;
- the light source element comprising a light waveguide, 86, having said light exit face and at least one light entry face, 100;
- a surface, 96, lying opposite the light exit face and at least some of lateral surfaces [surface facing viewer in Figure 7 and surface behind (away from viewer), as well as the lower vertical portions of the left and right surfaces] connecting the light exit face and

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the opposite surface being covered with reflectors, 104 on left and right, that at least one of reflect and diffusely return light; and

the light entry face, 100, being formed by a part of at least one of the lateral surfaces and the opposite surface not provided with a reflector and being arranged at an acute angle [concave curve has a portion that is at an acute angle – please note Applicant has not claimed planar (flat) surfaces] relative to one of principal directions of extent of the light waveguide.

As to claim 27, Kalmanash discloses the light source element according to claim 26 wherein a light infeed unit at an aperture region of a respective reflector is provided at the light waveguide, said light infeed unit comprising a light source, 102, arranged in front of the aperture region such that light radiation emitted during operation by the light source penetrates into the light waveguide with an oblique angle.

As to claim 29, Kalmanash discloses the light source element according to claim 26 wherein the light waveguide comprises a shape such that the light exit face, 88, and the opposite surface, 96, of the light waveguide describe an angle differing from zero.

As to claim 31, Kalmanash discloses the light source element according to claim 26 wherein the reflectors are integrally connected to one another [as assembled and as integrated by lower reflector, 98, per Figure 6].

As to claim 38, Kalmanash discloses the light source element according to claim 26 wherein the light waveguide comprises a projection extending beyond a lateral surface and aligns with the light exit surface, at least one light source being arranged under said projection [top is considered down in Figure 6, please note Applicant has not claimed which way is up].

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 35 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kalmanash in view of Kalmanash.

As to claim 35, Kalmanash discloses the light source element according to claim 26 above, wherein the reflectors are one of reflective and diffusely back-scattering.

Kalmanash does not explicitly disclose the element wherein reflectors are formed of one of a film.

Kalmanash teaches that it is usual for edgelit panels to have a reflective coating [Applicant's film] applied to all surfaces that are not intended to pass light in order to improve efficiency [col. 5, lines 8-16].

Kalmanash is evidence that workers of ordinary skill in the art would find the reason, suggestion, or motivation to add reflectors formed of one of a film to improve efficiency.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the invention of Kalmanash with the reflective film of Kalmanash to improve efficiency.

As to claim 37, Kalmanash, as combined above, discloses the light source element according to claim 35 wherein at least one opening is formed in the film for passage of light radiation [obvious from the above teaching of Kalmanash].

4. Claim 39 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kalmanash as applied above in view of Nilsen et al (Nilsen) USPAT 6,356,389 B1.

As to claim 39, Kalmanash discloses the light source element according to claim 38 above wherein the projection faces toward the light source.

Kalmanash does not explicitly disclose the element wherein the surface facing toward the light source is covered with a film.



Nilsen teaches the use of *inter alia* an anti-reflection coating on the surface facing toward the light source [Applicant's covered with a film] to improve light utilization [col. 9, line 58 through col. 10, line 34].

Nilsen is evidence that workers of ordinary skill in the art would find the reason, suggestion, or motivation to add an anti-reflection film on the surface facing toward the light source to improve light utilization.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the invention of Kalmanash with the anti-reflection film of Nilsen on the surface facing toward the light source to improve light utilization.

5. Claim 36 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kalmanash as applied above in view of Tai et al (Tai) USPAT 6,092,904.

As to claim 36, Kalmanash discloses the light source element according to claim 35 above.

Kalmanash does not explicitly disclose the element wherein the film is formed on a base of polycarbonate.

Tai teaches the use of polycarbonate (col. 4, lines 1-15) as an art recognized material suitable for the purpose of making light utilization efficiency improving structures and/or coatings [MPEP 2144.07].

Tai is evidence that workers of ordinary skill in the art would find the reason, suggestion, or motivation to add a base of polycarbonate as an art recognized material suitable for the purpose of making light utilization efficiency improving structures and/or coatings.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the invention of Kalmanash with the base of polycarbonate of Tai as an art recognized material suitable for the purpose of making light utilization efficiency improving structures and/or coatings.

6. Claims 40 and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kalmanash in view of Suzuki et al (Suzuki) USPAT 5,949,346.

As to claim 40, Kalmanash discloses the light source element according to claim 35 above.

Kalmanash does not explicitly disclose the element wherein the film is at least one of coated and printed with white color.

Suzuki teaches [col. 8, lines 1-8] the use of a white coating as an art recognized material suitable for the purpose of making a reflector for a light source element [MPEP 2144.07].

Suzuki is evidence that workers of ordinary skill in the art would find the reason, suggestion, or motivation to add a film that is at least one of coated and printed with

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white color as an art recognized material suitable for the purpose of making a reflector for a light source element.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the invention of Kalmanash with a film that is at least one of coated and printed with white color of Suzuki as an art recognized material suitable for the purpose of making a reflector for a light source element.

As to claim 42, Kalmanash discloses the light source element according to claim 27 wherein at least one light source is a semiconductor light-emitting diode (LED).

Kalmanash does not explicitly disclose the use of LEDs.

Suzuki teaches [col. 3, lines 25-30] the use of at least one light source is a semiconductor light-emitting diode as a light source for low cost and good brightness.

Suzuki is evidence that workers of ordinary skill in the art would find the reason, suggestion, or motivation to add a semiconductor light-emitting diode as a light source for low cost and good brightness.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the invention of Kalmanash with a semiconductor light-emitting diode of Suzuki as a light source for low cost and good brightness.

7. Claim 41 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kalmanash in view of Akahane et al (Akahane) USPAT 5,667,289.

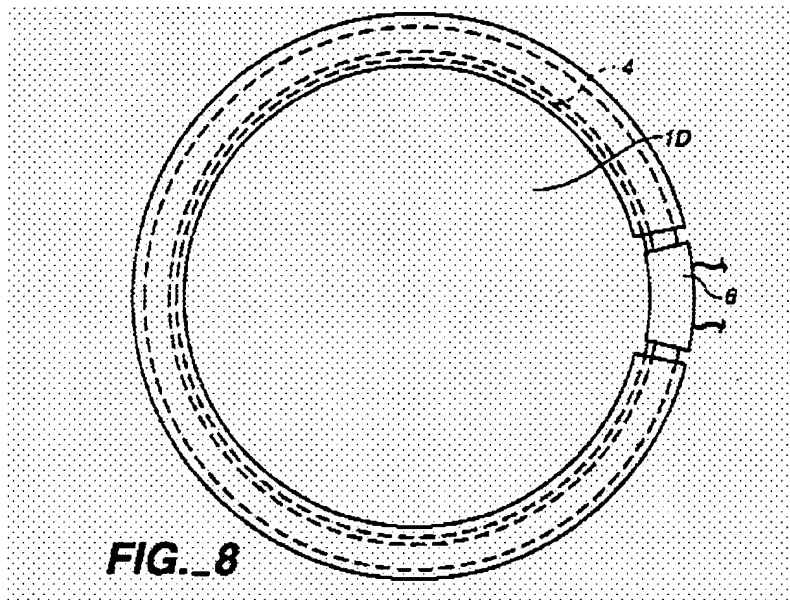
As to claim 41, Kalmanash discloses the light source element according to claim 26 above.

Kalmanash does not explicitly disclose an element wherein the light source element forms a closed ring.

Akahane teaches that his light source element can be any of a number of shapes to accommodate different displays including a closed ring per Figure 8.

Akahane is evidence that workers of ordinary skill in the art would find the reason, suggestion, or motivation to add an element wherein the light source element forms a closed ring as an art recognized configuration suitable for illumination [MPEP 2144.07] of a display shape.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the invention of Kalmanash with the element wherein the light source element forms a closed ring as an art recognized configuration suitable for illumination of a display shape.



8. Claims 32-34 rejected under 35 U.S.C. 103(a) as being unpatentable over Kalmanash as applied above in view of Waitl et al (Waitl) USPAT 5,040,868.

As to claims 32-34, Kalmanash discloses the light source element according to claim 26 above.

Kalmanash does not explicitly disclose an element wherein 1) a material of the reflectors is capable of being injection molded and the reflectors are manufactured by injection molding, wherein 2) a material of the reflectors is formed of a thermoplastic polyester on a base of polybutyleneterephthalate, and wherein 3) a material of the reflectors comprises Pocan®

Waitl teaches [col. 4, lines 16-55] the use of injection moldable (1) Pocan® (3) [Applicant's polybutyleneterephthalar (2)] to form reflectors for illuminators that have good heat resistance.

Waitl is evidence that workers of ordinary skill in the art would find the reason, suggestion, or motivation to add of injection moldable Pocan® [Applicant's polybutyleneterephthalar] to form reflectors for illuminators that have good heat resistance.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the invention of Kalmanash with the add of injection moldable Pocan® [Applicant's polybutyleneterephthalar] to form reflectors for illuminators that have good heat resistance.

9. Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kalmanash as applied above in view of Sawayama USPAT 6,048,071.

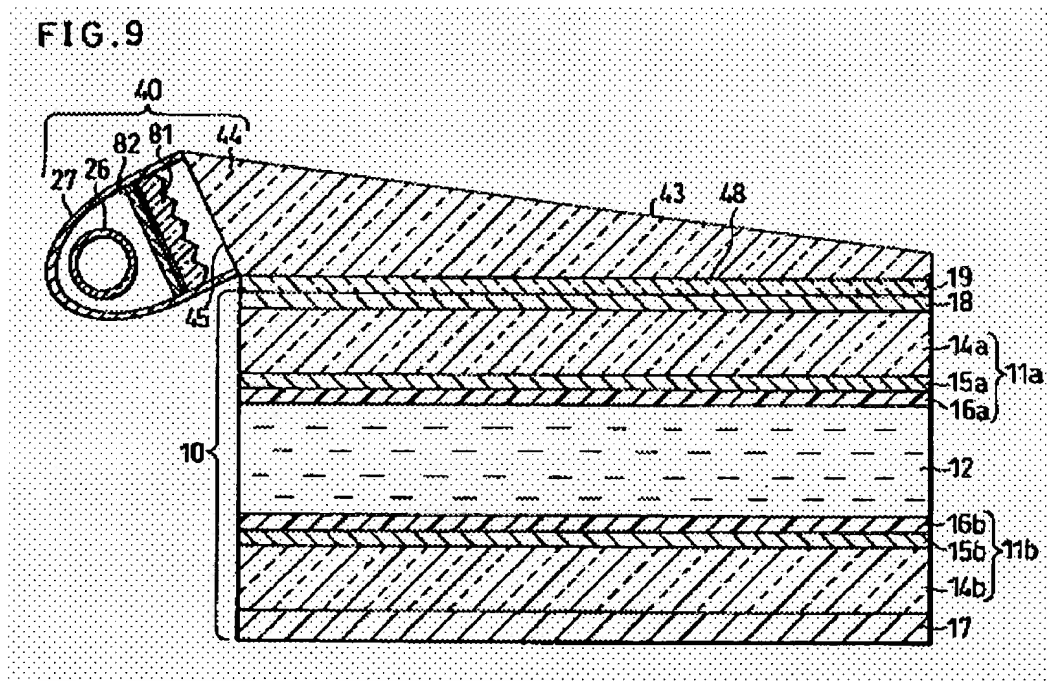
As to claim 28, Kalmanash discloses the light source element according to claim 27 above wherein at least one projection is formed in at least one of at least one longitudinal lateral surface and the opposite surface of the light waveguide, a lateral surface of said projection being covered by a reflector and another lateral surface of the projection lying free toward the outside and forming the aperture region.

Kalmanash does not explicitly disclose the element wherein the projection is triangular.

Sawayama teaches the use of a triangular projection for the illuminator in Figure 9 to achieve desired direction of the travel of light to illuminate a display [abstract].

Sawayama is evidence that workers of ordinary skill in the art would find the reason, suggestion, or motivation to add a triangular projection for the illuminator to achieve desired direction of the travel of light to illuminate a display.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the invention of Kalmanash with the triangular projection of Sawayama for the illuminator to achieve desired direction of the travel of light to illuminate a display.



10. Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kalmanash as applied above in view of Suga USPAT 6,297,908.

As to claim 30, Kalmanash discloses the light source element according to claim 26 above.

Kalmanash does not explicitly disclose an element wherein at least one of the light exit face and the opposite surface of the light waveguide comprise light-scattering sections and plane sections, and an area ratio of the plane sections to the light-scattering sections along the light waveguide is set such that a uniform luminance of the light source element is achieved.

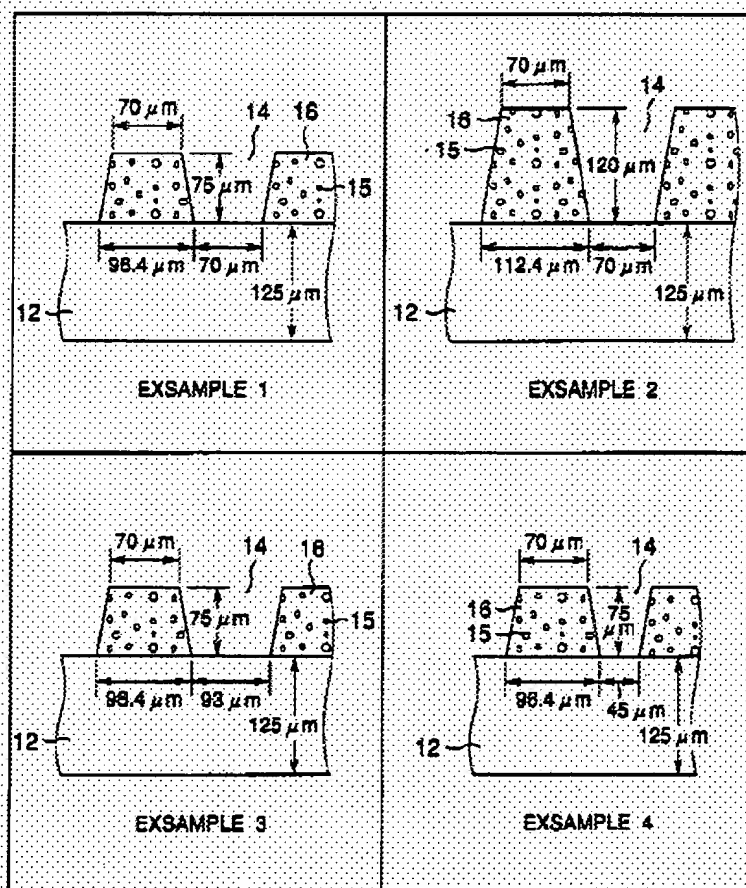
Suga teaches in Figure 12 the use of at least one of the light exit face and the opposite surface of the light waveguide comprise light-scattering sections and plane sections, and an area ratio of the plane sections to the light-scattering sections along the light waveguide is set such that a uniform luminance of the light source element is achieved to provide improved performance directional light diffusing film [col. 1, line 60 through col. 2, line 5].

Suga is evidence that workers of ordinary skill in the art would find the reason, suggestion, or motivation to add at least one of the light exit face and the opposite surface of the light waveguide comprise light-scattering sections and plane sections, and an area ratio of the plane sections to the light-scattering sections along the light waveguide is set such that a uniform luminance of the light source element is achieved to provide improved performance directional light diffusing film.



Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the invention of Kalmanash with the at least one of the light exit face and the opposite surface of the light waveguide comprise light-scattering sections and plane sections, and an area ratio of the plane sections to the light-scattering sections along the light waveguide is set such that a uniform luminance of the light source element is achieved of Suga to provide improved performance directional light diffusing film.

FIG.12



11. Claim 44 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kalmanash as applied above in view of Ge USPAT 6,369,867 B1.

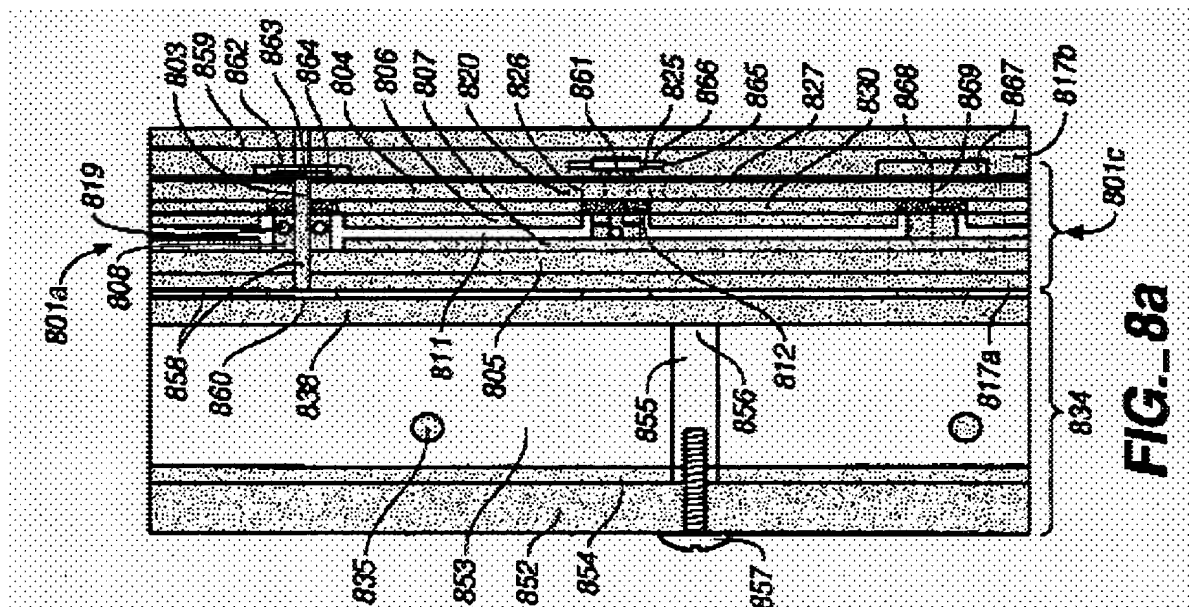
As to claim 44, Kalmanash discloses the liquid crystal display according to claim 43 above.

Kalmanash does not explicitly disclose a display wherein the liquid crystal element is held spaced from the light exit face by spacers.

Ge teaches a display wherein the liquid crystal element is held spaced from the light exit face by spacers to provide good strength and support for a diffuser [col. 8, line 63 through col. 9, line 22].

Ge is evidence that workers of ordinary skill in the art would find the reason, suggestion, or motivation to add a display wherein the liquid crystal element is held spaced from the light exit face by spacers to provide good strength and support for a diffuser.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the invention of Kalmanash with the a display wherein the liquid crystal element is held spaced from the light exit face by spacers of Ge to provide good strength and support for a diffuser.



### Conclusion

References cited but not applied are relevant to the instant Application.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy L. Rude whose telephone number is (571) 272-2301. The examiner can normally be reached on Monday through Thursday.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank Font can be reached on (571) 272-2415. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



tlr

Timothy L. Rude  
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